NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

COVER CROP

(Hectare, Acre)
CODE 340

DEFINITION

A crop of close-growing grasses, legumes, or small grain grown primarily for seasonal protection and soil improvement. It usually is grown for 1 year or less, except where there is permanent cover as in orchards.

PURPOSE

To control erosion during periods when the major crops do not furnish adequate cover; add organic material to the soil; and improve infiltration, aeration, and tilth.

CONDITIONS WHERE PRACTICE APPLIES

On cropland; certain recreation and wildlife areas; and orchard, vineyard, and small fruit areas.

CRITERIA

The following criteria will be used individually or in combination to accomplish cover and green manure cropping:

The established vegetation shall provide sufficient ground cover to significantly reduce the detachment and transportation of soil particles.

The selection of plants will be based on site specific conditions. The following conditions will be the minimum considered for plant selection:

1. Soil chemistry (pH, excess or deficiency in minerals affecting plant survival and growth, availability of nutrients).
2. Physical properties of the soils including structure, texture, bulk density, and pore space.
3. Soil water holding capacity and water movement.
4. Soil organic matter.
5. Site topography (slope, position, shape).
6. Total rainfall and its intensity.
7. Existing and potential natural vegetation.
8. Potential effects of pests and competition.

The plant selected must be adapted to the anticipated environmental stresses. The plant material's morphology and growth form must be suitable for the intended purpose. The location, layout and density of the planting will accomplish the purpose and function intended within a six (6) month period.

Site preparation shall be sufficient for establishment and growth of selected plant material and site appropriate. At a minimum, site preparation will reduce existing competition to a level that will ensure survival and rapid establishment.

Where vegetation is to be established by direct seeding, site preparation shall ensure a favorable environment for seed germination. Conditions for a favorable environment include adequate soil water holding capacity and plant nutrients, and a soil surface conditions that will retain the seed in place.

Only viable, high quality, and adapted planting stock or seed will be used. If plantings are to be established by direct seeding, seed requiring scarification to facilitate germination will be treated appropriately. Germination test will be conducted to determine seeding rates.

The planting or seeding shall be done at a time and manner to ensure survival and growth of selected plants. Adequate soil moisture will be present at the time of planting or seeding.

The planting will be protected from adverse stresses such as insects, disease, livestock damage and fire.

The timing and use of equipment will be appropriate for the site and soil conditions.

The time and manner of incorporating the crop into the soil shall be based on plant, height and diameter, and flowering characteristics.

PLANNING CONSIDERATIONS

Evaluate slopes and soils, erosive forces, adapted vegetative materials, time of year for proper establishment of vegetation, necessity for irrigation, soil fertility needs, visual aspects, fire hazards, and other special needs.

Where soil chemistry, especially soil pH, will adversely affect plant growth, consider liming or other soil amendment needs to improve plant survival and growth.

Nutrient requirements of the selected plants should be met to ensure rapid establishment and to maintain plant vigor. Where feasible, soil nutrients levels should be determined through soil testing at an appropriate laboratory.

Evaluate the effects of this practice are to be included in the nutrient management specification for the rotation.

If planting or seeding is scheduled during anticipated periods of moisture stress, adequate irrigation as provided for under the Pacific Basin standard, Irrigation System, Sprinkler (442), should be planned and implemented as part of the conservation plan.

Evaluate the timing of cover and green manure crop in the cropping sequence shall satisfy requirements as set in Pacific Basin standard, Conservation Crop Rotation, (328).

Evaluate potential affect of competing vegetation on the survival and growth of the selected plants.

The potential of the selected plant to become a weed problem on the treated field, or on adjacent sites or fields should be considered.

WATER QUANTITY

Cover and green manure cropping may have a minor effect on the quantity of surface and ground water. If there are large areas involved, there may be a reduction of surface runoff and increased infiltration and percolation.

Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

Effects of vegetation management on soil moisture.

Effects of increased organic matter on water holding capacity of the soil.

Potential for a change in plant growth and transpiration because of changed in soil water volume.

WATER QUALITY

This practice may reduce soil erosion and sediment delivery to surface waters. Plants may take up more of the nutrients in the soil, reducing the amount that can be washed into surface waters or leached into ground water.

Effects on erosion and movement of sediment and soluble and sediment attached substances carried by runoff.

Filtering effects of vegetation on movement of sediment and dissolved and sediment-attached substance.

Effects on the visual quality of downstream water resources.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation. Specify the plant or seed species, sprigging or seeding rate, scarification or other seed treatment, planting method, and any fertilizer and/or lime requirements. Plant selection shall be from the attached list of approved plants for the Pacific Basin.

OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

1. Reseeding where germination rates are poor to provide the intended cover density.
2. Supplemental water will be provided as needed.
3. Damaging pest will be monitored and controlled.
4. Periodic applications of nutrients may be needed to maintain plant vigor.
5. Incorporate the green manure crop into the soil at the appropriate time as specified for the plants and intended purpose.